

PLANT PARASITIC NEMATODES ASSOCIATED WITH  
SCHEFFLERA IN FLORIDA

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*Schefflera*, *Brassaia actinophylla* Endl., is a tree native to Australia and is widely used in southern Florida as a landscape plant. *Schefflera* is also used for tropical effects in commercial buildings, shopping malls, patios, and homes. Due to the consistent demand for this plant, it has become an important item in the Florida foliage industry.

Samples are routinely collected from Florida nurseries to certify that soils and plants are free of certain regulated nematodes. Based on these samples, at least 14 genera of plant parasitic nematodes are known to be associated with *schefflera* (unpublished Division of Plant Industry records, 1974-1983). Of 129 sites sampled during the past 10 years, plant parasitic nematodes occurred at 33% of them. Several genera of plant parasitic nematodes were often associated with the same planting of *schefflera*. *Meloidogyne* sp., or root-knot nematode, occurred at 63% of the sites where plant parasitic nematodes were found. Root-knot nematode has been associated with *schefflera* in nurseries in Bay, Broward, Dade, Hillsborough, Martin, Orange, and Palm Beach counties in Florida.

Observations in nurseries and greenhouse studies at the Division of Plant Industry have shown that the most common species of root-knot nematode, *M. arenaria* (Neal) Chitwood, *M. incognita* (Kofoid and White) Chitwood, and *M. javanica* (Treub.) Chitwood cause chlorosis and stunting of *schefflera* (1,2). All three species of root-knot nematodes tested caused galls and produced egg

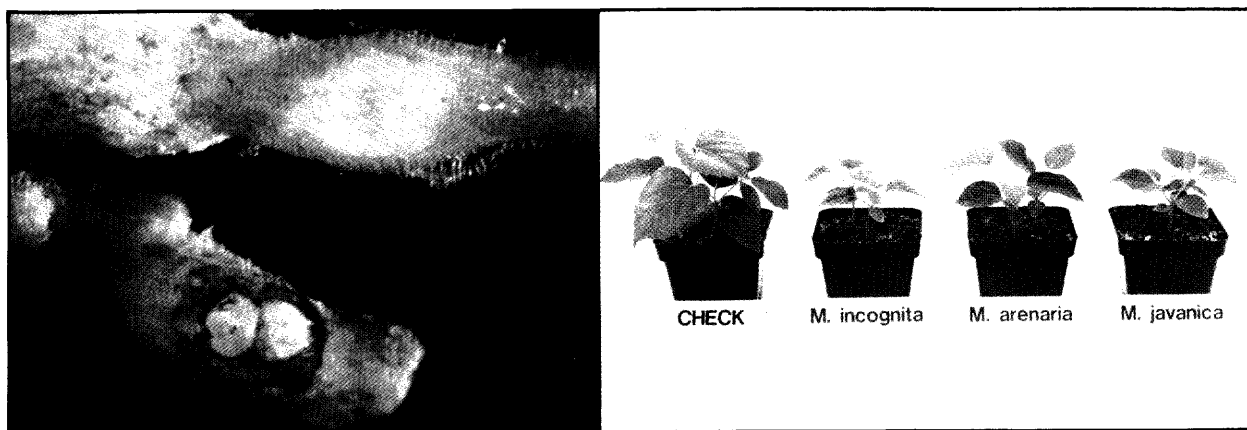


Fig. 1. Galls caused by root-knot nematodes on *schefflera* roots. Two females shown in gall at lower left (enlarged approximately 6X). (DPI photo #701888-16).

Fig. 2. Stunting of *schefflera* caused by three species of *Meloidogyne* compared to normal growth of the check plant without nematodes. (Photo six weeks after inoculation.) (DPI Photo #701863-3)

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masses (Fig. 1). Six weeks after inoculation, all three species reduced plant height as compared to noninoculated check plants (Fig. 2). At 12 weeks, plants inoculated with 10,000 eggs per pot of *M. incognita*, *M. arenaria*, and *M. javanica* had top weights which were 54, 31, and 25% lower, respectively, than noninoculated check plants. At the higher inoculum level of 100,000 eggs per pot, greater stunting occurred. Inoculated plants had fewer leaves, lower widths and heights, and reduced root systems (Fig. 3) (2).

Other species or genera of plant parasitic nematodes associated with schefflera in Florida are: *Belonolaimus* sp., *Cacopaurus* sp., *Criconema* sp., *Criconemoides* sp., *Hemicyclophora* sp., *Helicotylenchus* sp., *H. dihystra* Cobb, *Hoplolaimus* sp., *Macroposthonia* sp., *Pratylenchus* sp., *P. coffeae* (Zimmermann) Filipjev & S. Stekhoven, *Rotylenchulus reniformis* Linford and Oliveira, *Scutellonema* sp., *S. brachyurum* (Steiner) Andrassy, and *Tylenchorhynchus* sp. Most of these nematodes are infrequently associated with schefflera, but spiral nematodes, *Helicotylenchus* sp. and *Scutellonema* sp., occur almost as frequently as root-knot nematodes. Although it is clear that at least three species of root-knot nematode may have significant economic impact on schefflera production in Florida, there have been no studies to evaluate the effect of other genera of plant parasitic nematodes associated with schefflera in Florida nurseries.

Several nematicides are registered for use in nurseries on schefflera, but information is very limited on cost-benefit ratios and economics threshold levels. Control of nematodes through good sanitation practices is recommended.

**SURVEY AND DETECTION:** Nematodes may cause foliar chlorosis and stunt the growth of tops and roots of schefflera. When these symptoms are observed, roots and soil surrounding the roots of schefflera should be submitted for laboratory analysis.

#### LITERATURE CITED:

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2. Lehman, P. S., and D. E. Stokes. 1980. Effects of three species of *Meloidogyne* on the growth of schefflera. J. Nematol. 12:229 (abstr.).

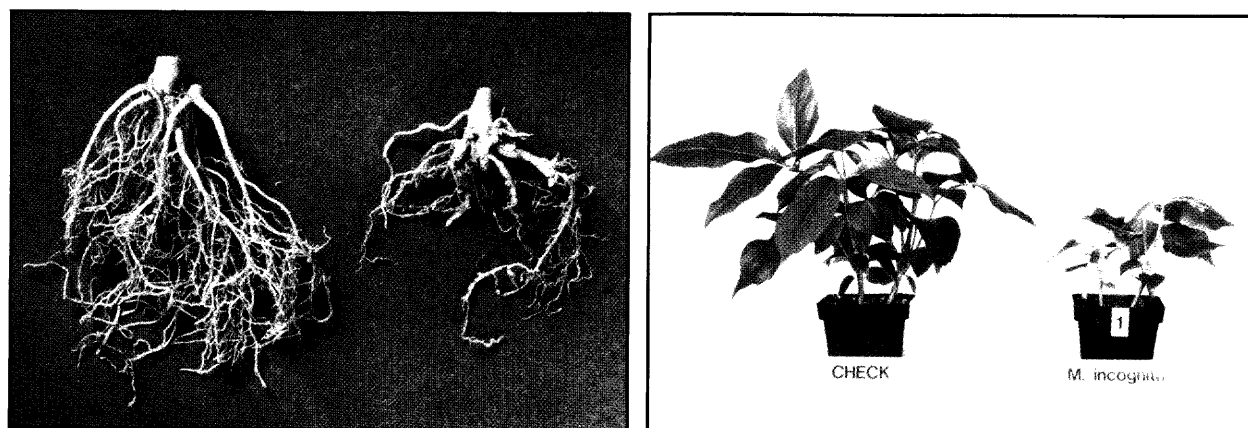


Fig. 3. Stunting of schefflera roots and tops (at right of photos) caused by *M. incognita* compared to check plants without nematodes (at left of photos). (Photos taken 12 weeks after inoculation.) (DPI photos #70188-4 & 701888-11A)